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APPLICANT: PREMIER COMMUNICATIONS

FCC ID: N2EPR45

TEST REPORT:

EXHIBIT CONTAINING:

GENERAL INFORMATION REQUIRED
FOR TYPE ACCEPTANCE

2.983 (a,b,c) PREMIER COMMUNICATIONS will sell the MODEL NO. N2EPR45 VHF transmitter in quantity, for use under FCC RULES PART 22 & 90.

2.983 (d) TECHNICAL DESCRIPTION

(1) Type of Emission: 10K0F3E For 25KHz
10K0F3E For 12.5KHz

For 25KHz
Bn = 2M + 2DK
M = 3000
D = 1.8KHz (Peak Deviation)
K = 1
Bn = 2(3.0K) + 2(1.5K)(1) = 6.0K + 3.0K = 9.0K
ALLOWED AUTHORIZED BANDWIDTH = 20.00KHz.

For 12.5KHz
Bn = 2M + 2DK
M = 3000
D = 1.8KHz (Peak Deviation)
K = 1
Bn = 2(3.0K) + 2(1.5K)(1) = 6.0K + 3.0K = 9.0K
ALLOWED AUTHORIZED BANDWIDTH = 11.25KHz.
90.209(b)(5)

(2) Frequency Range: 38-50 MHz

(3) Power Range and Controls: There are NO user Power controls.

(4) Maximum Output Power Rating:
0.5/2.5/5.0 Watts ,
into a 50 ohm resistive load.

(5) DC Voltages and Current into Final Amplifier:

POWER INPUT
FINAL AMPLIFIER ONLY
Vce = 12.0 Volts
5.0W Ice = 0.970mA
2.5W Ice = 0.670mA
0.5W Ice = 0.40mA

Pin =11.65 Watts
Pin = 8.1 W for 2.5W O/P
Pin = 4.8W for 0.5W O/P

(6) Function of each electron tube or semiconductor device or other active circuit device:
- SEE EXHIBIT .

2.983(d) (7) Complete Circuit Diagrams: The circuit diagram is included as EXHIBIT 6. The block diagram is included as EXHIBIT 5.

(8) Instruction book. The instruction manual is included as EXHIBIT #9.

(9) Tune-up procedure. The tune-up procedure is given in EXHIBIT #7A-7B.

(10) Description of all circuitry and devices provided for determining and stabilizing frequency is included in the circuit description in the instruction manual.

2.983 (11) Description of any circuits or devices employed for suppression of spurious radiation, for limiting modulation, and for limiting power.

In addition to the interstage filtering the multi-section low pass filter made up of C1004,L1001, C1005, L1002, C1010, C1014 & C1015.

Limiting Modulation:
The transmitter audio limiting circuitry is contained in the loop filter IC01.

Limiting Power: There is no provision for limiting power.

(12) Digital modulation. This unit does NOT use digital modulation.

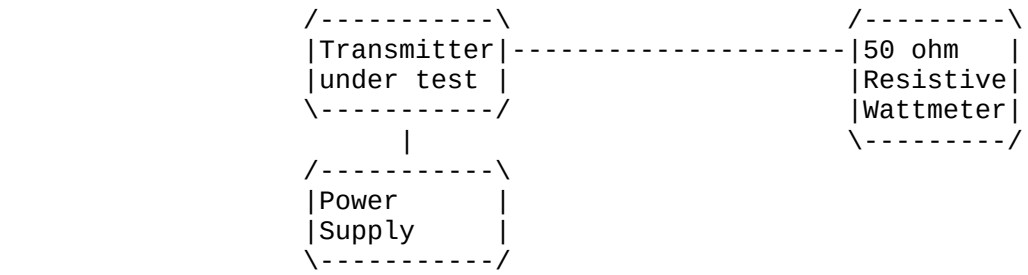
2.983(e) The data required by 2.985 through 2.997 is submitted below.

2.985(a) RF power output.

RF power is measured by connecting a 50 ohm, resistive wattmeter to the RF output connector. With a nominal battery voltage of 12.0 VDC, and the transmitter properly adjusted the RF output measures:

POWER HIGH
INPUT POWER: (12.0V)(0.97) = 11.6 Watts
OUTPUT POWER: 5.8 Watts Efficiency: 45%
POWER Medium Power
INPUT POWER: (12.0V)(0.67) = 8.04 Watts
OUTPUT POWER: 3.0 Watts Efficiency: 37.3%
POWER LOW Power
INPUT POWER: (12.0V)(0.40) = 4.80 Watts
OUTPUT POWER: 0.5 Watts Efficiency: 10.4%

METHOD OF MEASURING RF POWER OUTPUT



2.987(a) Voice Modulation characteristics:

(a) AUDIO FREQUENCY RESPONSE See the EXHIBIT #10.

2.987(a) AUDIO LOW PASS FILTER
The audio low pass filter is included and the plot is shown as EXHIBIT #12. Rules 90.210(b,d, & e) for mobile stations with a low pass filter.

2.987(b) Audio input versus modulation A plot of the audio input versus deviation is shown in in EXHIBIT #11A-11C,

2.989(c) Occupied bandwidth:

90.210(b,)
Data in the plots shows that on any frequency removed from the assigned frequency by more than 50%, but not more than 100%: At least 25dB. On any frequency removed from the assigned frequency by more than 100%, but not more than 250%: At least 35dB. On any frequency removed from the assigned frequency by more than 250%, of the authorized bandwidth: At least 43+log(P)dB.

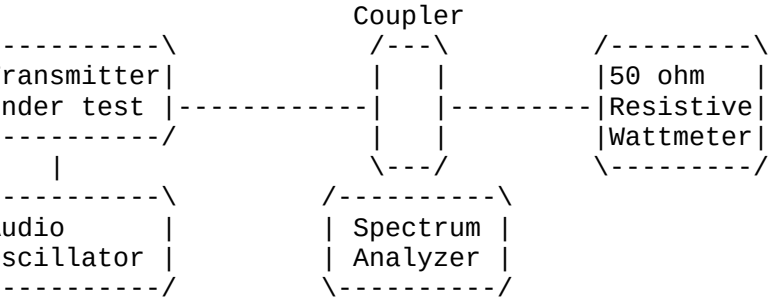
90.210(d) 12.5KHz channel bandwidth equipment. For transmitters de signed to operate with a 12.5KHz channel bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows;
(1) On any frequency from the center of the authorized bandwidth f0 to 5.625kHz removed from fP0: Zero dB.
(2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency 7.27(fd-2.88kHz)dB.
(3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency(fd in kHz of more than 12.5kHz: At least 50+10Log(P) or 70dB, whichever is the lesser attenuation.

Radiotelephone transmitter with modulation limiter.

Test procedure: TIA/EIA-603 para 2.2.11 , with the exception that various tones were used.

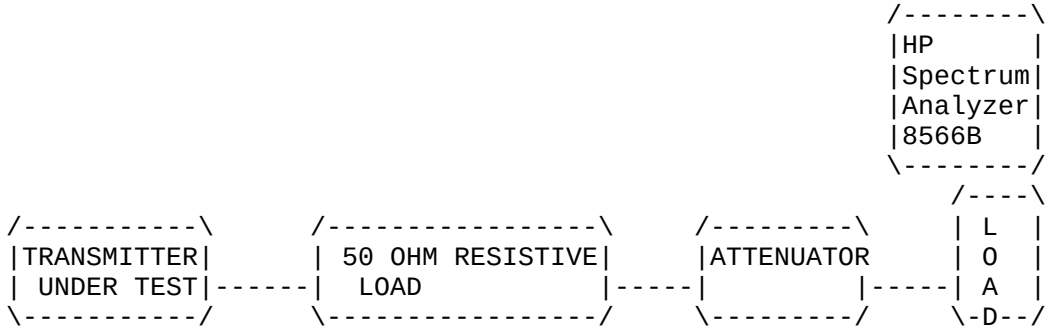
Test procedure diagram

OCCUPIED BANDWIDTH MEASUREMENT



2.991 Spurious emissions at antenna terminals(conducted): Data shows the level of con ducted spurious responses. The carrier was modulated 100% using a 2500Hz tone. The spectrum was scanned from 0.4 to at least the 10th harmonic of the fundamental. The measurements were made in accordance with standard TIA/EIA-603.

90.210(d)(3) Method of Measuring Conducted Spurious Emissions



REQUIREMENTS: Emissions must be 43 +10log(Po) dB below the mean power output of the transmitter.

For 25KHz 43 + 10log(5.1) = 43+ 7.0 = 50.1dB

For 12.5KHz 50 + 10log(5.0) = 50 + 7.6 = 57.6dBc

	EMISSION FREQUENCY MHz	dB BELOW CARRIER
Low Power	44.020	00.0
	88.030	-106.70
	176.325	-112.00
	441.230	-108.00
Medium Power	38.020	00.0
	76.030	-63.70
	114.010	-89.22
	152.070	-87.50
	190.02	-93.70
	228.04	-88.20
	266.06	-88.70
	380.20	-97.70
High Power	44.14	00.0
	88.22	-69.80
	132.34	-91.20
	176.44	-86.90
	220.50	-90.20
	264.60	-83.00
	308.75	-91.90
	397.05	-94.90
	441.40	-91.90

METHOD OF MEASUREMENT: The procedure used was TIA/EIA-603 STANDARD without any exceptions. An audio generator was connected to the UUT through a dummy microphone circuit and the output of the transmitter connected to a standard load and from the standard load through a pre-selector filter of the spectrum analyzer. The spectrum was scanned from 400KHz to at least the tenth harmonic of the fundamental using a HP model 8566B spectrum analyzer. The measurements were made using the shielded room located at TIMCO ENGINEERING INC. 849 N.W. STATE ROAD 45, NEWBERRY FLORIDA 32669.

2.993(a)(b) Field strength of spurious emissions:

NAME OF TEST: RADIATED SPURIOUS EMISSIONS

REQUIREMENTS: Emissions must be 50 +10log(Po) dB below the mean power output of the transmitter or 70dB, which ever is the lesser.

50 + 10log(5.8) = 57.6 dB

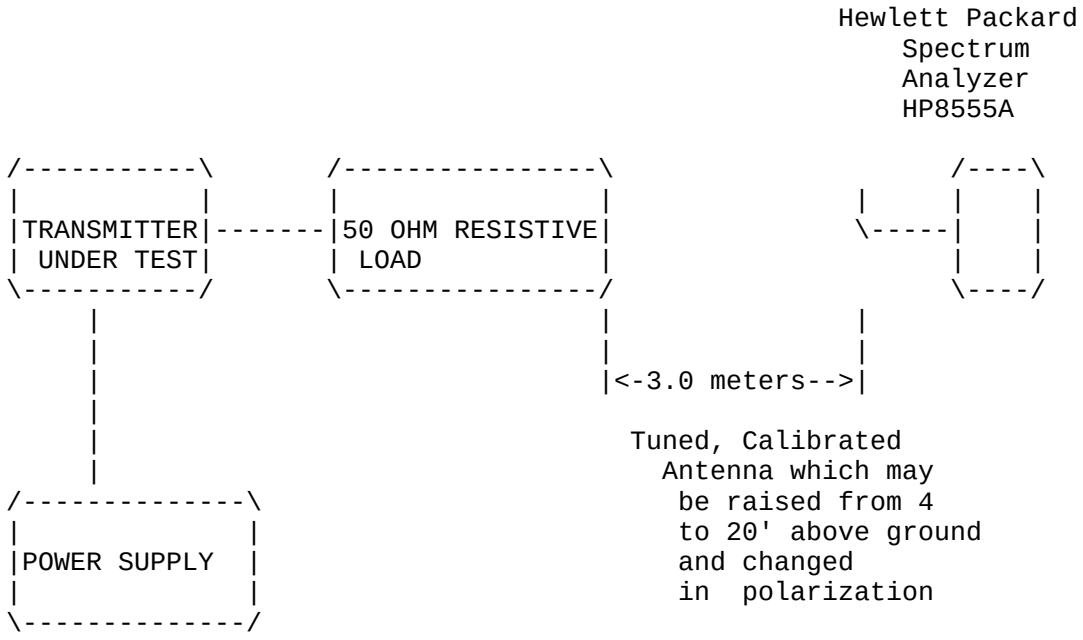
EMISSION FREQUENCY MHz	METER ATT. dB
0.5W	
44.00	0.00
88.00	100.68
132.00	82.92
176.00	84.67
220.00	86.88
264.00	84.36
308.00	86.39
352.00	86.25
440.00	86.70
2.5W	
44.00	0.00
88.00	81.20
132.00	82.34
176.00	81.84
220.00	84.25
264.00	83.55
308.00	85.88
352.00	85.78
440.00	84.97
5.0W	
44.00	0.00
88.00	79.32
132.00	81.57
176.00	80.24
220.00	83.85
264.00	82.63
308.00	83.44
352.00	84.38
440.00	82.85

METHOD OF MEASUREMENT: The tabulated Data shows the results of the radiated field strength emissions test. The spectrum was scanned from 30 to at least the tenth harmonic of the fundamental. This test was conducted per TIA/EIA-603. Measurements were made at the open field test site of TIMCO ENGINEERING INC. located at 849 N.W. STATE ROAD 45, Newberry, FL 32669.

2.993(a)(b)

2.993(a)(b) Continued Field strength of spurious emissions:

Method of Measuring Radiated Spurious Emissions



Equipment placed 4' above ground
on a rotatable platform.

2.995(a)(b)(d) Frequency stability:
90.213(a)

Temperature and voltage tests were performed to verify that the frequency remains within the .0020%, 20.0 ppm specification limit.The test was conducted as follows: The transmitter was placed in the temperature chamber at 25 degrees C and allowed to stabilize for one hour. The transmitter was keyed ON for one minute during which four frequency readings were recorded at 15 second intervals. The worse case number was taken for temperature plotting. The assigned channel frequency was considered to be the reference frequency. The temperature was then reduced to -30 degrees C after which the transmitter was again allowed to stabilize for one hour. The transmitter was keyed ON for one minute, and again frequency readings were noted at 15 second intervals. The worst case number was recorded for temperature plotting. This procedure was repeated in 10 degree increments up to + 50 degrees C.

Readings were also taken at minus 25% of the battery voltage of 9.0VDC, which we estimate to be the battery endpoint.

MEASUREMENT DATA:

Assigned Frequency (Ref. Frequency): 50.000 055 MHz

TEMPERATURE C	FREQUENCY MHz	PPM
REFERENCE_____	50.000 055	00.00
-30_____	49.999 538	+10.30
-20_____	50.999 830	+ 4.50
-10_____	50.999 993	+ 1.24
0_____	50.000 056	- 0.02
+10_____	50.000 192	- 2.74
+20_____	50.000 063	- 0.16
+30_____	50.000 006	- 1.00
+40_____	49.999 970	+ 1.70
+50_____	49.999 976	+ 1.58

-15% Supply Voltage VDC 10.2VDC
+15% Supply Voltage VDC 13.8VDC

RESULTS OF MEASUREMENTS: The maximum frequency variation over the temperature range was +10.30 to -2.74 ppm. The maximum frequency variation over the voltage range was +0.50 ppm.

2.983(f) Photo or Drawing of Label:
See Exhibit 2.

2.983(g) Photos of Equipment:
See Exhibits 4A-4F.

2.999 Measurement Procedures for Type Acceptance:

Measurement techniques have been in accordance with EIA specifications and the FCC requirements.

2.909 Certification of Technical Data by Engineers

We, the undersigned, certify that the enclosed measurements and enclosed data are true and correct.

_____
S.S. Sanders
Engineer

TEST EQUIPMENT LIST

1. Spectrum Analyzer: HP 8566B-Opt 462, S/N 3138A07786, w/ preselector HP 85685A, S/N 3221A01400, Quasi-Peak Adapter HP 8565OA, S/N 3303A01690 & Preamplifier HP 8449B-OPT H02, S/N 3008A00372 Cal. 10/17/99
2. Signal Generator: HP 8640B, S/N 2308A21464 Cal. 9/23/99
3. Signal Generator: HP 8614A, S/N 2015A07428 Cal. 5/29/99
4. Passive Loop Antenna: EMCO Model 6512, 9KHz to 30MHz, S/N 9706-1211 Cal. 6/23/97
5. Biconnical Antenna: Eaton Model 94455-1, S/N 1057
6. Log-Periodic Antenna: Electro-Metrics Model EM-6950, S/N 632
7. Dipole Antenna Kit: Electro-Metrics Model TDA-30/1-4, S/N 153 Cal. 11/24/99
8. Double-Ridged Horn Antenna: Electro-Metrics Model RGA-180, 1-18 GHz, S/N 2319 Cal. 4/27/99
9. Horn 40-60GHz: ATM Part #19-443-6R
10. Line Impedance Stabilization Network: Electro-Metrics Model FCC-25/2, S/N 2512 Cal. 11/18/99
11. Line Impedance Stabilization Network: Electro-Metrics Model ANS-25/2, S/N 2604 Cal. 11/30/99
12. Line Impedance Stabilization Network: Electro-Metrics Model EM-7820, S/N 2682 Cal. 12/1/99
13. Line Impedance Stabilization Network: Electro-Metrics Model EM-7821, S/N 101 Cal. 12/1/99
14. Temperature Chamber: Tenney Engineering Model TTRC, S/N 11717-7
15. AC Voltmeter: HP Model 400FL, S/N 2213A14499 Cal. 9/21/99
16. Digital Multimeter: Fluke Model 8012A, S/N 4810047 Cal 9/21/99
17. Digital Multimeter: Fluke Model 77, S/N 43850817 Cal 9/21/99
18. Oscilloscope: Tektronix Model 2230, S/N 300572 Cal 9/23/99
19. Frequency Counter: HP Model 5385A, S/N 3242A07460 Cal 10/6/99